

Office of the Arizona Secretary of State  
**Report on the Partisan Review of the  
2020 General Election in Maricopa County**  
August 19, 2021



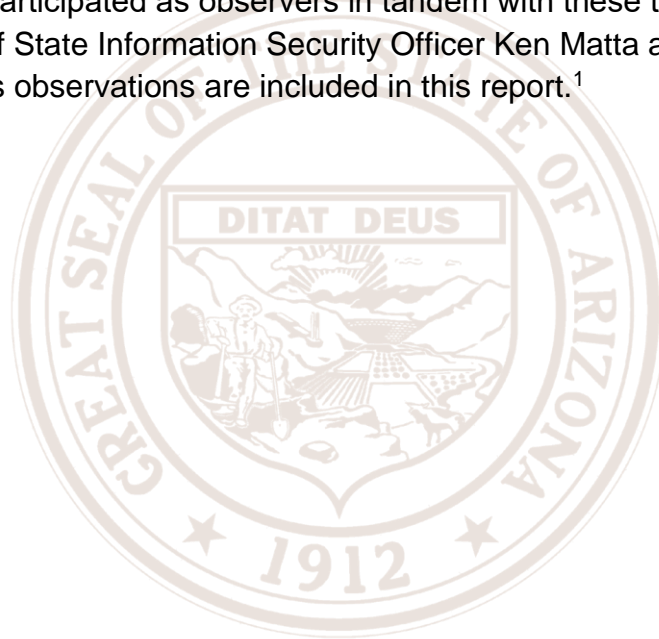
**KATIE HOBBS**  
SECRETARY OF STATE

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# Forward

The information contained within, where not indicated by a footnote, is the product of the Office of the Arizona Secretary of State and expert observers who were granted access to the Coliseum through a court-ordered settlement, which was agreed to by the Arizona Senate, Cyber Ninjas, and Cyber Ninjas' subcontractors. The primary observers, who were not paid or otherwise compensated for their time, travel, or any other expenses by the Secretary, or any agent thereof, were Ryan Macias, Jennifer Morrell, and Elizabeth Howard. Certified election officers on staff with the Secretary of State's Office also participated as observers in tandem with these three experts. Arizona Secretary of State Information Security Officer Ken Matta also participated as an observer, and his observations are included in this report.<sup>1</sup>



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<sup>1</sup> See Appendix A.

# Executive Summary

The 2020 General Election was unlike any election previously seen in the United States. Despite setbacks posed by a global pandemic, the unprecedented domestic and foreign spread of mis- and disinformation, and historic voter turnout, election officials across the nation rose to the occasion and administered a safe, secure, and accurate election. Historically, established election best practices have provided confidence and instilled faith that election officials were acting with integrity and fairness.

In Arizona, several pre- and post-election tests are undertaken in order to ensure the integrity of the election. These include the required logic and accuracy tests of election equipment both before and after the election, as well as the post-election hand count audits, which were completed with no evidence of discrepancies or widespread fraud. Additionally, Maricopa County election officials completed a separate forensic audit, which further confirmed that there was no systemic fraud. In fact, Arizona's results were canvassed, certified, litigated, and audited with no evidence of systemic fraud or interference.

Despite the overwhelming evidence of a secure election and a complete lack of evidence to support claims of systemic fraud, there are those at the national, state, and local levels who dismiss the validity of these tests and refuse to accept the outcome of the 2020 presidential election. Instead, they offer outlandish, unsubstantiated theories of fraud, perpetuating disinformation that continues to simultaneously undermine the results of a free and fair election and erode public confidence in the democratic process.

Embracing these conspiracy theories, Arizona Senate President Karen Fann pursued further review of the election in Maricopa County. Despite frequent references to this review as an audit, the exercise undertaken by the Arizona Senate's Florida-based contractor, Cyber Ninjas, fails to meet industry standards for any credible audit, much less for an election audit. The Senate's contractors demonstrated a lack of understanding of election processes and procedures both at a state and county level. This exercise is more accurately described as a partisan review of the 2020 General Election ballots in Maricopa County, the results of which are invalid and unreliable for a number of reasons, which are outlined in this report.

Problems plagued this exercise from the start, stemming from the opaqueness of the contractor's processes and procedures, as well as from glaring security issues which

were reported in the media.<sup>2</sup> This prompted the Secretary of State's Office to take legal action,<sup>3</sup> which resulted in a settlement agreement that provided ongoing access to the media and to Secretary of State observers. This report is based on the observations of experts who noted security lapses, issues surrounding the chain of custody of both ballots and tabulation equipment, and evidentiary integrity problems throughout the entire exercise. The overarching areas of concern include:

Lack of Security and Chain of Custody Procedures. For Example:

- Observers noted that there was no security presence preventing entrance into the venue or access to the areas where ballots were being stored on the first day of the review.
- Throughout the ballot review, ballot counters were seen with both black and blue pens. In a credible election audit, black and blue pens are prohibited because this ink can be read by ballot tabulators and used to alter ballots. As a result, there is no way to confirm if the original ballots that were being reviewed were altered or destroyed.
- Any participant using a computer could access critical systems housing tally data and ballot images because each computer had a single login, shared passwords, and no multifactor authentication.
- Observers noted that ongoing chain of custody interruptions for both the data and the equipment, including when voting system software and ballot image data was sent to a location in Montana, compromised the data integrity.

Lack of Transparency. For Example:

- Media and outside observers were not allowed to watch the proceedings initially; it was only as a result of litigation that they were allowed to observe. However, no observers were allowed to watch the review of the voting systems. Voting system data is reported to have then been sent to a company in Montana with no indication of how that data was secured or what was being done with it by the subcontractor.

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<sup>2</sup> Loew, M. (2021, April 23). *Security lapses plague Arizona Senate's election audit at State Fairgrounds*. AZFamily. [https://www.azfamily.com/news/investigations/cbs\\_5\\_investigates/security-lapses-plague-arizona-senates-election-audit-at-state-fairgrounds/article\\_b499aee8-a3ed-11eb-8f94-bfc2918c6cc9.html](https://www.azfamily.com/news/investigations/cbs_5_investigates/security-lapses-plague-arizona-senates-election-audit-at-state-fairgrounds/article_b499aee8-a3ed-11eb-8f94-bfc2918c6cc9.html).

<sup>3</sup> Oxford, A. (2021, May 6). *Democrats settle lawsuit with Arizona Senate, Cyber Ninjas on Maricopa county election audit*. The Arizona Republic. <https://www.azcentral.com/story/news/politics/arizona/2021/05/05/arizona-audit-settlement-reached-lawsuit-between-democrats-senate/4964988001/>.

- Observers noted serious concerns with the aggregation of tally sheets involving training, software, and ballot identification. For example, there are three sets of tallies recorded for every batch of ballots, and the sets of tallies are not required to match. Keeping three sets of tallies creates an opportunity to alter the results of the counting.

Lack of Consistent, Documented Quality Control Practices, Policies, and Procedures.  
For Example:

- Unlike a reliable election audit, policies, processes, and procedures were not clearly defined at the outset of the review. When, after a court order, some documentation was made available, observers noted that regulatory processes were rarely followed. Observers reported these discrepancies and were often informed that the policy, process, or procedure had been modified.
- There was no test plan or test procedure for the review of the voting systems, as is standard in a credible audit.
- The Senate's contractors changed procedures while the review was in process, sometimes in the middle of shifts, without updating documentation or training for those involved.
- Paper examination participants were encouraged to flag ballots as suspicious. Many of the reasons ballots were marked as suspicious were determined to be unfounded by observers knowledgeable in election equipment and ballot technology.
- Ballots were imaged using an unnamed software that observers found unreliable.
- Participants consistently made errors in the data collection.

There are numerous examples of failures that all but guarantee inaccurate results, which would also be impossible to replicate. Any one of these issues would deem an audit completely unreliable, but the combination of these failures renders this review meritless.

The 2020 election was secure and accurate, and it is well past the time to accept the results and move forward.

## **Section 1: The 2020 Election was Secure and Accurate**

On October 7, 2020, early ballots were mailed to voters, marking the start of the 2020 General Election in Maricopa County. The election concluded on November 30, 2020,



when the Secretary of State certified the results of the November 3, 2020 election. The breakdown of votes cast in Maricopa County is as follows:<sup>4</sup>

Elector Group	Counting Group	Ballots	Voters	Registered Voters	Turnout
Total	EARLY VOTE	1,915,487	1,915,487	2,595,272	73.81%
	ELECTION DAY	167,878	167,878		6.47%
	PROVISIONAL	6,198	6,198		0.24%
	Total	2,089,563	2,089,563		80.51%

According to the County's final official results, the Biden/Harris ticket received 1,040,774 votes (49.81%), the Trump/Pence ticket received 995,665 votes (47.65%), and the Jorgensen/Cohen ticket received 31,705 votes (1.52%).<sup>5</sup>

Multiple checks, reviews, and audits of the election confirmed the security and integrity of the process, as well as the accuracy of the results.

## Pre-Election Logic and Accuracy Testing

In accordance with Arizona election law, the Secretary of State's Office conducted a Logic and Accuracy (L&A) test on Maricopa County's election machines prior to the election. This process is established in Arizona Revised Statutes (A.R.S.) [§ 16-499](#) and occurs before every election. During the 2020 election cycle, the L&A test took place on October 6, 2020,<sup>6</sup> and was performed by the Secretary of State's staff. It was overseen by qualified election staff of different political parties.<sup>7</sup> Notice of the event was provided in a county-wide newspaper, online, via a media advisory, and was open to be observed by the public, press, political parties, and candidates via online observation links. The chairs of all three major political parties in the county—Democratic, Republican, and Libertarian—were invited to attend in September via direct communications with staff and a calendar invite.<sup>8</sup>

<sup>4</sup> Maricopa County Recorder's Office & Election Department, FINAL OFFICIAL RESULTS General Election November 3, 2020 (2020). Phoenix, Arizona.

<https://recorder.maricopa.gov/electionarchives/2020/11-03-2020-1%20Final%20Official%20Summary%20Report%20NOV2020.pdf>

<sup>5</sup> *Id.*

<sup>6</sup> Blasius, M. (2020, November 11). *Maricopa County Republican Chairman Rae Chornenky steps down*. KNXV. <https://www.abc15.com/news/election-2020/maricopa-county-republican-chairman-rae-chornenky-steps-down>; Maricopa County. *Maricopa County Election facts : Voting equipment & accuracy* <https://www.maricopa.gov/5539/Voting-Equipment-Facts>.

<sup>7</sup> Maricopa County, *supra* note 5.

<sup>8</sup> Slugocki, S. [@Slugocki]. (2020, October 6). *One of my legal responsibilities as County Chair is to conduct the accuracy tests of the voting machines and certify* [Tweet]. Twitter. <https://twitter.com/Slugocki/status/1313647249684004864>; Wingett Sanchez, Y. (2020, November 12).

The L&A test showed that the machines worked, accurately counting ballots and attributing votes to the correct candidates in the election management system, and that each candidate and ballot measure received the accurate number of votes—all without error.<sup>9</sup> Accordingly, on October 6, 2020, the Secretary of State certified that the voting equipment was errorless and ready for use in the election.<sup>10</sup>

## Post-Election Reviews

In the event of a discrepancy between the vote totals, election officials proceed under clear audit escalation procedures established in state law. Election officials will compare the hand count margin for each race to the designated margin established by the Vote Count Verification Commission (VCVC), which is composed of statisticians, election officials, and other elections experts, and by law, not more than three members may be of the same political party. Prior to each statewide election, the VCVC establishes the variance rate (the number of differences discovered between the hand count vote totals and the machine count vote totals), which triggers an expanded hand count, and, potentially, a full hand count of all ballots cast. If any hand-counted race results in a calculated margin that is equal to or greater than the designated margin for the precinct hand count, a second precinct hand count of that race and of those same ballots must be performed.

### Maricopa County Post-Election Hand Count Audit

Shortly after the election, from November 4 to November 9, 2020, the Maricopa County Elections Department conducted a hand count of ballots from 2% of the Election Day vote centers and 5,000 early ballots, as required by Arizona law. See A.R.S. [§ 16-602 \(B\)](#).<sup>11</sup>

Statute directs political party chairs (or their designees) to select which ballots will be counted by hand after an election.<sup>12</sup> Once unofficial vote totals are made public, officials from each party are required to meet and select at random, without the use of a computer,<sup>13</sup> five races from the election that will be subjected to the recount.<sup>14</sup> In the same manner, those officials are also required to select at least 2% of precincts in the

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*Maricopa County GOP chair resigns after skipping election equipment verification test.* The Arizona Republic. <https://www.azcentral.com/story/news/politics/elections/2020/11/12/maricopa-county-republican-party-chair-rae-chornenky-resigns-skipped-election-equipment-test/6263050002/>.

<sup>9</sup> Maricopa County, *supra* note 5.

<sup>10</sup> *Id.*

<sup>11</sup> *Id.*; Maricopa County, Arizona, *Hand Count/Audit Report* at 1, [https://azsos.gov/sites/default/files/2020\\_General\\_Maricopa\\_Hand\\_Count.pdf](https://azsos.gov/sites/default/files/2020_General_Maricopa_Hand_Count.pdf)

<sup>12</sup> A.R.S. § 16-602(B)(1-2).

<sup>13</sup> A.R.S. § 16-602(B)(1)

<sup>14</sup> A.R.S. § 16-602(B)(2)



county, or two precincts, whichever is greater, from which ballots will be hand recounted.<sup>15</sup> Additionally, those officials also select at least one batch<sup>16</sup> from each machine used for tabulating early ballots, and, in the same random manner, designate 1%, or five thousand ballots of those ballots, whichever is fewer, for hand recount.<sup>17</sup>

The hand count began on November 4, 2020, when the Maricopa County Chairs of the Republican, Democratic, and Libertarian parties met to randomly select the races, precincts, and batches of early voting ballots that would be recounted by hand,<sup>18</sup> after the participants took an oath to uphold the constitutions of the United States and Arizona.<sup>19</sup> The order of the draw was done by lots, and the Republican Party went first, followed by the Libertarian Party, and finally the Democratic Party.<sup>20</sup> The party representatives then selected five races across four precincts and 26 batches of early voting ballots for hand counting.<sup>21</sup>

The races selected included President, Arizona Corporation Commission, Proposition 208, U.S. Representative, and State Senator. The precincts selected included Trinity Bible Church, ASU Polytechnic, Betania Presbyterian Church, and Turf Paradise, and they combined for 2,917 ballots.<sup>22</sup> The 26 early voting batches contained 5,165 ballots.<sup>23</sup>

The actual hand count of these ballots was conducted by 26 three-member boards, with not more than two members of each board from the same political party.<sup>24</sup> The audit boards are composed of people appointed by the Republican, Democratic and Libertarian party chairs.<sup>25</sup>

Upon completion of the hand recount, no discrepancies were noted between the machine tabulated results and the actual count.<sup>26</sup> This confirmed that the machines had accurately counted the ballots.

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<sup>15</sup> A.R.S. § 16-602(B)(1)

<sup>16</sup> In the 2020 election, batches ranged from 192-200 ballots.

<sup>17</sup> A.R.S. § 16-602(F)(1).

<sup>18</sup> Maricopa County, *supra* note 10, at 1.

<sup>19</sup> Maricopa County Recorder's Office. [@RecordersOffice]. (2020, November 7). *Thank you to the appointed volunteers from all 3 political parties in @maricopacounty who spent their Saturday participating* [Tweet]. Twitter. <https://twitter.com/RecordersOffice/status/1325235298234593280?s=20>

<sup>20</sup> Maricopa County, *supra* note 10, at 1.

<sup>21</sup> *Id.*

<sup>22</sup> *Id.* at 1-2, 4.

<sup>23</sup> *Id.* at 5.

<sup>24</sup> *Id.* at 1.

<sup>25</sup> Maricopa County, *supra* note 5.

<sup>26</sup> Maricopa County, *supra* note 10, at 1.

## Maricopa Post-Election Logic and Accuracy Testing

Local election officials must also conduct a post-election L&A test of tabulation equipment after the official count has been completed but before the county canvass.<sup>27</sup> L&A testing “is intended to confirm that votes are attributed to the correct candidates and ballot measures in the election management system (EMS) and that each candidate and ballot measure receives the accurate number of votes.”<sup>28</sup>

Maricopa County officials completed their post-election L&A testing of the voting equipment on November 18, 2020, with members of the Republican, Democratic, and Libertarian parties, as well as the Arizona Attorney General’s Office in attendance.<sup>29</sup> This test was open to the public and a press advisory was sent beforehand.<sup>30</sup> As required, Maricopa officials used the same test ballots as were used during the pre-election L&A testing. This test generated the same results as the pre-election L&A test: no discrepancies were found.<sup>31</sup>

## Additional Post-Election Audits in Maricopa County

On January 27, 2021, the Maricopa County Board of Supervisors unanimously voted to commission a “forensic audit of ballot tabulation equipment used in the 2020 election.”<sup>32</sup> This audit was “comprised of three separate audits”: 1) voting system procurement audit (conducted by a Certified Public Accounting Firm), 2) compliance forensic audit (performed by a Voting System Testing Laboratory (VSTL) accredited by the U.S. Election Assistance Commission (EAC), and 3) field audit (performed by a VSTL accredited by the EAC).<sup>33</sup> The field audit and compliance audit were focused on the

<sup>27</sup> Arizona Election Manual, Chapter 12, Section II

<sup>28</sup> Arizona Election Manual, Chapter 4, Section II

<sup>29</sup> Maricopa County. (2021, January 27). *2020 election security & accuracy*. <https://maricopacountyaz.medium.com/2020-election-security-accuracy-7044895ef410>; Arizona Republic. (2020, November 20). *Postelection logic and Accuracy test for Maricopa County tabulation machines*. <https://www.azcentral.com/picture-gallery/news/politics/elections/2020/11/20/postelection-logic-and-accuracy-test-maricopa-county/3770104001/>.

<sup>30</sup> Maricopa County Elections Department. (2020, November 17). Media Advisory: Post Election Logic and Accuracy Test on Nov. 18. <https://content.govdelivery.com/accounts/AZMARIC/bulletins/2acffff>.

<sup>31</sup> Maricopa County, *supra* note 28; Arizona Republic, *supra* note 28.

<sup>32</sup> Maricopa County. *Auditing elections equipment In Maricopa County*. <https://www.maricopa.gov/5681/Elections-Equipment-Audit>.

<sup>33</sup> *Id.*; Jarrett, S., & Valenzuela, R. (2021, February 23). Update on the Forensic Audit of Maricopa County's Tabulation Equipment. <https://www.maricopa.gov/DocumentCenter/View/66842/Foresic-Audit-Transmittal-Letter>

software, systems, and elections equipment, and began on February 2, 2021, and were completed over the following two weeks. They found no evidence of vote-switching, internet connectivity, tabulation software modifications, malicious software, or hardware installation, and these results were published on February 23, 2021.<sup>34</sup>

Maricopa County officials concluded: “The combination of these findings, along with the pre- and post-election logic and accuracy tests performed by election officials, the post-election hand count performed by the political parties, and the many security protocols implemented by the Elections Department, confirm that Maricopa County’s Elections Department’s configuration and setup of the voting equipment and election management system provided an accurate counting of ballots and reporting of results.”<sup>35</sup>

## Section 2: Arizona Senate Republicans conduct Secretive and Disorganized Review

Despite Maricopa County Election Officials’ compliance with Arizona’s established statutory regime for reviewing election results, State Senate President Karen Fann and the Senate Judiciary Committee sought an additional review of the election in Maricopa County. While they did not question the accuracy of the votes cast on these ballots for their Republican colleagues in the state legislature, they took the unprecedented step of issuing a subpoena for Maricopa County’s 2020 election materials to launch a partisan review of the results for U.S. President and U.S. Senator—two statewide races won by Democratic candidates.

On December 15, 2020, President Fann and then-Chair of the Judiciary Committee Senator Eddie Farnsworth subpoenaed Maricopa County’s nearly 2.1 million ballots and election machinery in order to conduct what they called a “full forensic audit.”<sup>36</sup> On

<sup>34</sup> *Id.*; See SLI Compliance. (2021, February 23). *Forensic Audit Report: Dominion Voting Systems, Democracy Suite 5.5B*. <https://www.maricopa.gov/DocumentCenter/View/66843/SLI-Compliance-Forensic-Audit-Report?bidId=>.

(“SLI Compliance found there to be no internet connectivity occurring within the specific time period (July 6, 2020 through November 20, 2020) on any of the examined components.”; “No instance of malicious software was found on any of the devices.”); Pro V&V. (2021, February 23). *Field Audit Report: Dominion Voting Systems Democracy Suite (D-Suite) 5.5-B Voting System Maricopa Post-Election Field Audit*. <https://www.maricopa.gov/DocumentCenter/View/66844/Post-Audit-Report>.

(“Pro V&V determined that the network it evaluated is a “Closed Network” and does not have access to the internet.”; “No discrepancies [discovered by a malware/virus scanning software] were noted at any time”; “[A]ll [test] votes were tallied and adjudicated resulting in an accurate ballot count.”)

<sup>35</sup> Jarrett & Valenzuela, *supra* note 32.

<sup>36</sup> See *Maricopa County et al. v. Fann et al.*, [Compl. Ex. 1](#) (subpoena), Maricopa Cty. Sup. Ct., No. CV2020-016840 (Dec. 18, 2020). Senator Farnsworth was later replaced with Senator Warren Petersen

December 18, 2020, the Maricopa County Board of Supervisors filed a complaint in Maricopa County Superior Court, asking the court to quash the subpoenas and declare them unlawful.<sup>37</sup>

While this challenge was pending, on January 12, 2021, President Fann and Senator Petersen served updated subpoenas on the Maricopa County Board of Supervisors; Stephen Richer, the Maricopa County Recorder; and John Allen, the Maricopa County Treasurer.<sup>38</sup> A full list of the requested materials can be found in the [subpoenas](#).

The County and Senators litigated the validity of the subpoenas, and on February 25, 2021, Judge Timothy Thomason ruled that the subpoenas were valid.<sup>39</sup> He found the Senate's stated reasoning—to determine whether changes should be made to the state election code—valid and within its powers, though he also noted concerns about voters' privacy and ballot security, concluding that the Senators were “obligated to maintain the confidentiality” of the subpoenaed ballot information.<sup>40</sup>

On March 31, 2021, President Fann announced that she had hired a Florida-based cybersecurity company called Cyber Ninjas to conduct what it called a “comprehensive, full forensic audit of the 2020 election in Maricopa County.”<sup>41</sup> It remains unclear how Fann chose Cyber Ninjas, as the company has no documented election experience and did not submit a formal bid.<sup>42</sup> While at least one other vendor submitted a bid to conduct a forensic audit for \$8 million, Cyber Ninjas agreed to charge the Senate \$150,000. The Senate's contractors announced in July 2021 that supporters had raised \$5.7 million in connection with the Senate's ballot review.<sup>43</sup> This followed an earlier report that the

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when Petersen took over as the Chairperson of the Judiciary Committee at the start of the 2021 legislative session in January.

<sup>37</sup> *Id.*

<sup>38</sup> See *Maricopa County et al. v. Fann et al.*, [Not. Re New Subpoenas](#), Maricopa Cty. Sup. Ct., No. CV2020-016840 (Jan. 12, 2020); *Maricopa County et al. v. Fann et al.*, [Not. Re New Subpoenas Ex. A](#), Maricopa Cty. Sup. Ct., No. CV2020-016840 (Jan. 12, 2020); <https://www.azmirror.com/blog/judge-reschedules-arguments-due-to-new-subpoena-in-election-audit-fight/>

<sup>39</sup> Fifield, J. (2021, February 27). *Judge rules Maricopa county must provide 2020 ballots to Arizona Senate for audit under subpoenas*. The Arizona Republic. <https://www.azcentral.com/story/news/politics/elections/2021/02/26/judge-says-maricopa-county-must-provide-2020-ballots-arizona-senate/6825892002/>.

<sup>40</sup> *Id.*

<sup>41</sup> Duda, J. (2021, April 1). *Arizona Senate hires a 'stop the steal' advocate to lead 2020 election audit*. Arizona Mirror. <https://www.azmirror.com/2021/03/31/arizona-senate-hires-a-stop-the-steal-advocate-to-lead-2020-election-audit/>.

<sup>42</sup> Riccardi, N. (2021, May 23). *Experts or 'grifters'? Little-known firm runs Arizona audit*. AP NEWS. <https://apnews.com/article/donald-trump-arizona-business-technology-election-recounts-c5948f1d2ecdff9e93d4aa27ba0c1315>.

<sup>43</sup> Duda, J. (2021, July 29). *Election conspiracy theorist groups paid \$5.7 million for the Arizona 'audit'*. Arizona Mirror. <https://www.azmirror.com/2021/07/28/election-conspiracy-theorist-groups-paid-5-7-million-for-the-arizona-audit/>.



costs of the exercise had topped \$9 million<sup>44</sup>, and a judge indicating that the Arizona Senate cannot keep information regarding the funding sources private.<sup>45</sup>

Cyber Ninjas proceeded to subcontract with smaller firms, which were also lacking significant elections experience and were not accredited by the U.S. Election Assistance Commission: Wake Technology Services, Inc., CyrFir, and Digital Discovery.<sup>46</sup> Only Wake Technology Services, Inc. had conducted a post-election audit, which had involved fewer than 8,000 ballots (compared to the 2.1 million in Maricopa). The Senate's contractors subcontracted with Wake to run the review's hand count. However, when Wake's contract ended on May 14, 2021, the company chose not to continue and left with the hand count review unfinished.<sup>47</sup> This disruption led to a new company, StratTech Solutions, an Arizona internet technology company with no election auditing experience, replacing Wake.<sup>48</sup>

The Statement of Work, agreed to by the State Senate and Cyber Ninjas, detailed Cyber Ninjas' planned course of work, including four phases: "Registration and Votes Cast Phase"; "Vote Count and Tally Phase"; "Electronic Voting System Phase"; and "Reported Results Phase."<sup>49</sup> As described, the "Registration and Votes Cast Phase" was meant to include phone calls and physical "canvassing" of Maricopa County voters to question them about undefined "anomalies." However, on May 5, 2021, the U.S. Department of Justice sent a letter to President Fann, warning her that the procedures being used for the "audit" may violate federal law, including laws which prohibit voter intimidation and laws which require election officials to safeguard and preserve federal election records.<sup>50</sup> On May 7, 2021, President Fann sent a letter in response to the Department of Justice, explaining that the Senate would "indefinitely defer" the "voter

<sup>44</sup> Pulitzer, J. *How do you feel about today in #Maricopa*. (2021). <https://www.facebook.com/JovanHuttonPulitzer/videos/985248078942100/?t=19>.

<sup>45</sup> *American Oversight v. Fann et al.*, Order to Produce Public Records, Maricopa Cty. Sup. Ct., No. CV2021-008265 (Aug. 2, 2021).

<sup>46</sup> Fifield, J., Randazzo, R., & Oxford, A. (2021, April 1). *Founder of company hired to conduct Maricopa county election audit promoted election fraud theories*. The Arizona Republic. <https://www.azcentral.com/story/news/politics/elections/2021/03/31/cyber-ninjas-founder-doug-logan-pushed-election-fraud-theories/4825258001/>.

<sup>47</sup> Fifield, J., & Oxford, A. (2021, May 26). *Tech company running Arizona ballot recount backs out: 'they were done'*. The Arizona Republic. <https://www.azcentral.com/story/news/politics/elections/2021/05/25/cyber-ninjas-subcontractor-strattech-solutions-takes-over-arizona-election-audit-hand-count/7429980002/>.

<sup>48</sup> *Id.*

<sup>49</sup> Cyber Ninjas. (2021). *Statement of Work*. See Appendix B or <https://www.documentcloud.org/documents/20536950-arizona-senate-cyber-ninjas-statement-of-work-executed-033121>.

<sup>50</sup> Karlan, P. (2021, May 5). DOJ Letter to Fann. <https://assets.documentcloud.org/documents/20698904/doj-letter-to-fann-5-5-21.pdf>

canvassing” component of the process.<sup>51</sup> Senate Liaison Ken Bennett quickly contradicted Fann, stating the team “will still do ‘spot checks’ of some addresses, such as places where a large number of votes were reportedly cast.”<sup>52</sup>

## **Lack and Transparency and Access**

In contrast to election audits conducted by election officials in compliance with state law that are open to the public and the press, the State Senate and their contractors have consistently fought to prevent or limit access by the public or press to information about the review, including written procedures, who the counters and staff members are, and who is funding this exercise.<sup>53</sup> Citing the proprietary interests, they prevented independent nonpartisan experts and press from observing the process at the Coliseum.<sup>54</sup> Initially, only One American News Network, a television network that helped to organize and fund the review, was granted access.<sup>55</sup>

In a March 3, 2021 letter to President Fann and Arizona Senator Warren Peterson, the Arizona Secretary of State expressed her concern with the Senate’s plans to review ballots.<sup>56</sup> Alongside other suggestions and requests, she requested that the Senate “[p]ermit the Secretary of State’s Office, the Governor’s Office, the Attorney General’s Office, Maricopa County officials, and political party designees to observe every step of any audit and any handling, inspection, or counting of ballots.”<sup>57</sup> The Senate failed to respond.

On April 20, 2021, the Maricopa County Elections Department announced that it would transfer ballots and election equipment to the Veterans Memorial Coliseum in Phoenix

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<sup>51</sup> Fann, K. (2021, May 7). Fann Response to DOJ.

<https://assets.documentcloud.org/documents/20700735/fann-response-to-doj-5-7-21.pdf>

<sup>52</sup> Duda, J. [@JeremyDuda]. (2021, May 12). *Though @FannKfann told DOJ that the audit indefinitely suspended plans to knock on voters’ doors to confirm voter* [Tweet]. Twitter.

<https://twitter.com/jeremyduda/status/1392629603785527300?s=20>

<sup>53</sup> MacDonald-Evoy, J. (2021, April 23). *Senate won’t say who is funding the election audit or allow media access*. Arizona Mirror. <https://www.azmirror.com/2021/04/23/senate-wont-say-who-is-funding-the-election-audit-or-allow-media-access/>.

<sup>54</sup> Oxford, A. (2021, April 26). *Cyber ninjas, hired by Arizona Senate to recount Maricopa County’s ballots, asks court to keep its procedures secret*. The Arizona Republic. <https://www.azcentral.com/story/news/politics/elections/2021/04/25/cyber-ninjas-wants-to-keep-its-arizona-election-recount-secret/7379117002/>.

<sup>55</sup> Mimms, S. (2021, May 18). *Pro-Trump OAN reporters are Blatantly raising money for a BOGUS election “Audit” In Arizona*. BuzzFeed News. <https://www.buzzfeednews.com/article/sarahmimms/arizona-election-results-oan-reporters-fundraising>.; Valdes, N. (2021, May 5). *Maricopa County Senate Audit observers forced to sign non-disclosure agreements*. KNXV. <https://www.abc15.com/news/state/maricopa-county-senate-audit-observers-forced-to-sign-non-disclosure-agreements>.

<sup>56</sup> Hobbs, K. (2021, March 3) Letter to Karen Fann.

[https://azsos.gov/sites/default/files/Fann\\_Letter\\_3\\_3\\_2021.pdf](https://azsos.gov/sites/default/files/Fann_Letter_3_3_2021.pdf)

<sup>57</sup> *Id.* at 3.



(“the Coliseum”), the venue selected for the exercise.<sup>58</sup> The next day, on April 21, the Secretary of State’s Elections Director, Sambo Dul, emailed Fann and former Secretary of State Ken Bennett, the Senate’s “audit liaison,” to request permission to designate independent experts to observe the audit alongside national nonpartisan nonprofit organizations.<sup>59</sup> Dul also requested that the audit be open to press observers. Bennett expressed openness to the idea by telephone, but neither Bennett nor Fann followed through.<sup>60</sup>

At the same time, the Senate’s contractors sought to keep press out of the Coliseum and to keep its policies and procedures for conducting the process a secret.<sup>61</sup> The only publicly available information was its Statement of Work.

In a letter to Fann and Bennett dated April 22, 2021, multiple Arizona news organizations voiced similar concerns, describing the press’s failed efforts to gain access to the Coliseum and explaining why the refusal to permit press observers violated the First Amendment.<sup>62</sup>

That same day, the Arizona Democratic Party and a member of the Maricopa Board of Supervisors sued in Arizona Superior Court to stop the ballot review, citing violations of Arizona election law and risks to voter privacy and ballot security.<sup>63</sup>

The court subsequently ordered the Senate’s contractors to file all policies and procedures relevant to the exercise by April 25, 2021.<sup>64</sup> Cyber Ninjas and the Senate defendants immediately appealed the order with the Arizona Supreme Court and were denied.<sup>65</sup> The contractors also requested that its policies and procedures be sealed and that a hearing on the matter be closed to the public, claiming legislative privilege as well

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<sup>58</sup> Maricopa County Elections Department. *Maricopa County to Deliver Subpoenaed Election Materials to Arizona Senate*. (2021, April 20). <https://www.maricopa.gov/CivicAlerts.aspx?AID=2235>.

<sup>59</sup> See *Arizona Democratic Party et al. v. Fann et al.*, [Mot. to Intervene by Ariz. Sec. of State Katie Hobbs, Ex. A \(proposed Compl.\)](#), Maricopa Cty. Sup. Ct., No. CV2021-006646 (Apr. 27, 2021) at 4.

<sup>60</sup> See *Arizona Democratic Party et al. v. Fann et al.*, [Mot. to Intervene by Ariz. Sec. of State Katie Hobbs, Ex. A \(proposed Compl.\)](#), Maricopa Cty. Sup. Ct., No. CV2021-006646 (Apr. 27, 2021) at 4.

<sup>61</sup> MacDonald-Evoy, *supra* note 52.

<sup>62</sup> Bodney, D. (2021, April 22). Phoenix Newspapers, Inc., Arizona Broadcasters Association and Arizona Mirror/News Organizations’ Right of Access to Election Audit .

<https://assets.documentcloud.org/documents/20689181/election-audit-access-demand-letter.pdf>; see also Alexander, P. et al., (2021, April 22). Letter to Karen Fann. <https://www.brennancenter.org/sites/default/files/2021-04/Arizona%20Senate%20Audit%20Letter.pdf>.

<sup>63</sup> *Arizona Democratic Party et al. v. Fann et al.*, [Complaint](#), Maricopa Cty. Sup. Ct., No. CV2021-006646 (Apr. 22, 2021), *Arizona Democratic Party et al. v. Fann et al.*, [Order Denying Special Action](#), Ariz. Sup. Ct., No. C21-0102-SA (Apr. 23, 2021).

<sup>64</sup> *Arizona Democratic Party et al. v. Fann et al.*, [Complaint](#), Maricopa Cty. Sup. Ct., No. CV2021-006646 (Apr. 22, 2021) at 4.

<sup>65</sup> *Arizona Democratic Party et al. v. Fann et al.*, [Order Denying Special Action](#), *supra* note 62.

as trade secret protection.<sup>66</sup> Arizona Supreme Court Justice Clint Bolick denied that motion.<sup>67</sup>

On April 26, 2021, the First Amendment Coalition of Arizona filed a motion in the Superior Court to intervene in the lawsuit for the purpose of opposing these secrecy requests, which was granted.<sup>68</sup> The Secretary of State's Office moved to intervene on April 27,<sup>69</sup> requesting that the court order the defendants to "allow independent observers, including independent experts designated by the Secretary, members of political parties, and members of the press, to effectively observe the audit."<sup>70</sup> The court granted the Secretary's motion over the defendants' objections,<sup>71</sup> and following a hearing and negotiations,<sup>72</sup> all parties agreed that the Secretary's independent expert observers could observe the proceedings.<sup>73</sup>

The parties later reached a settlement on additional issues<sup>74</sup>, and while the review was allowed to continue, the Senate's contractors were required to provide greater transparency into their procedures and permit the press and qualified observers throughout the review.<sup>75</sup>

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<sup>66</sup> *Arizona Democratic Party et al. v. Fann et al.*, [Simultaneous Brief of Cyber Ninjas](#), Maricopa Cty. Sup. Ct., No. CV2021-006646 (Apr. 25, 2021) at 2, 5-6.

<sup>67</sup> *Arizona Democratic Party et al. v. Fann et al.*, [Order Denying Special Action](#), supra note 62, at 2.

<sup>68</sup> *Arizona Democratic Party et al. v. Fann et al.*, [Mot. to intervene by First Amendment Coalition of Arizona](#), Maricopa Cty. Sup. Ct., No. CV2021-006646 (Apr. 26, 2021).

<sup>69</sup> *Arizona Democratic Party et al. v. Fann et al.*, [Mot. to Intervene by Ariz. Sec. of State Katie Hobbs, Ex. A \(proposed Compl.\)](#), supra note 58.

<sup>70</sup> *Id.*

<sup>71</sup> *Arizona Democratic Party et al. v. Fann et al.*, [Mot. to Intervene by Ariz. Sec. of State Katie Hobbs](#), Maricopa Cty. Sup. Ct., No. CV2021-006646 (Apr. 27, 2021).

<https://www.clerkofcourt.maricopa.gov/home/showpublisheddocument/2663/637551959803530000>

<sup>72</sup> *Arizona Democratic Party et al. v. Fann et al.*, [Order to Meet and Confer](#), Maricopa Cty. Sup. Ct., No. CV2021-006646 (Apr. 28, 2021) Min. Entry, Dkt. No. 5 at 3.

<sup>73</sup> Phillips, M. (2021, April 30). *Secretary of state gets observers inside Maricopa county Election Audit, Cyber Ninjas has to reveal methods*. KNXV. <https://www.abc15.com/news/state/secretary-of-state-gets-observers-inside-maricopa-county-election-audit-cyber-ninjas-has-to-reveal-methods>.

<sup>74</sup> *Arizona Democratic Party, et al. v. Fann et al.*, Settlement Agreement. Maricopa Cty. Sup. Ct., No. CV2021-006646 (May 5, 2021). See Appendix C or

<https://assets.documentcloud.org/documents/20698756/settlement-agreement-final-00547419xc217c.pdf>

<sup>75</sup> *Id.*

### Section 3: Expert Election Observers Document Senate Reviews Failures

“The legitimacy of an election—the peaceful transference of power based on the will of the people—necessitates diligence in assuring that the correct outcome was announced and certified.”<sup>76</sup> Pursuant to Arizona law, election administration in Arizona incorporates many aspects of performance management, security, quality control, *and* pre-election testing and robust post-election auditing protocols that can identify issues that impact the legitimacy of an election.<sup>77</sup> These audits provided further evidence of the integrity of Maricopa County’s elections and the accuracy of the certified election outcome.

“Professional auditing is a method of verifying, through evidence gathered by inquiry, observation and testing, the activities and results of a process.”<sup>78</sup> Furthermore, “it is the method by which third parties and stakeholders—both internal and external to the process—can be assured that the process was performed in accordance with the established procedures and will increase acceptance of the process outcomes because of the independent validation of the established procedures.”<sup>79</sup>

The purported “audit” conducted by the Senate’s contractors did not meet this definition. Moreover, it failed to satisfy the basic standards for elections auditing. Because of these failures, any findings or report issued by Cyber Ninjas, or the state senate, based on the information collected using these faulty and inconsistently-applied procedures and processes, should not be considered trustworthy or accurate.

#### Designated Election Observers

Following the litigation, the Secretary of State’s Office consistently sent qualified, non-partisan election experts to observe the review.<sup>80</sup> Based on their observations inside the Coliseum, the expert observers documented and quickly shared concerns, which allowed the SOS to report issues and to ensure that the public received timely information. The following section outlines the most significant concerns noted by the expert observers.

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<sup>76</sup> Morrell, J. (2019, May). *Knowing It's Right, Part One A Practical Guide to Risk-Limiting Audits*. [https://democracyfund.org/wp-content/uploads/2020/06/2019\\_DF\\_KnowingItsRight\\_Part1.pdf](https://democracyfund.org/wp-content/uploads/2020/06/2019_DF_KnowingItsRight_Part1.pdf).

<sup>77</sup> See e.g. ARS § 16-602 (prescribing post-election hand-count audits).

<sup>78</sup> The Maryland State Board of Elections . (2008, December 3). *Development of a Pilot Election Audit Program*. [https://elections.maryland.gov/press\\_room/documents/Maryland\\_Pilot%20Election%20Audit\\_12-3-2008.pdf](https://elections.maryland.gov/press_room/documents/Maryland_Pilot%20Election%20Audit_12-3-2008.pdf).

<sup>79</sup> *Id.*

<sup>80</sup> A timeline of the observers’ review is included at Appendix X.

## Overarching Concerns

### Lack of Compliance with Federal Law

Federal law requires election officials to safeguard and protect election materials, including ballots, for 22 months after an election.<sup>81</sup> “Election [materials must] be retained either physically by election officials themselves, or under their direct administrative supervision. This is because the document retention requirements of this federal law place the retention and safekeeping duties squarely on the shoulders of election officers.”<sup>82</sup> At all times, “election officers [must retain] ultimate management authority over the retention and security of those election records, including the right to physically access [these records].”<sup>83</sup>

The Senate forced Maricopa County election officials to hand over voting machines and the approximately 2.1 million ballots cast in the November 2020 General Election. Based on observer accounts and understanding, the Senate and their agents, including the contractors, retained complete management authority over these materials upon Maricopa County election officials’ transfer of these materials, beginning on April 21, 2021, into their custody, as required pursuant to court order.

Upon receipt of these materials, the Senate, and its agents, including the contractors, failed to comply with the custodial duties to protect and maintain federal election materials.

## Transparency

Throughout this exercise, there have been concerns about transparency, despite the contractors describing it as the “most transparent in American history.”<sup>84</sup> Processes have changed throughout, without clear communication to the press or observers, and confusion on the floor was commonplace. The contractors were seemingly developing and changing procedures as they moved through the process. True transparency, a hallmark of a credible audit, was entirely lacking in this exercise. Although the contractors called much attention to the livestream of their efforts, in reality, the

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<sup>81</sup> 52 U.S.C. §§ 20701-20706.

<sup>82</sup> United States Department of Justice. (2017, December). *Federal Prosecution of Election Offenses*. <https://www.justice.gov/criminal/file/1029066/download>.

<sup>83</sup> *Id.* at 90.

<sup>84</sup> Dana, J. (2021, May 4). *Cyber ninjas claim Maricopa county election Audit 'most transparent in American history'*. 12news.com. <https://www.12news.com/article/news/local/valley/cyber-ninjas-claim-maricopa-county-election-audit-most-transparent-in-american-history/75-cfd09684-59c0-4848-8eea-84c99154f686>.



cameras did not cover all parts of the exercise, as the contractors purported they would. Processes, procedures, and standards remained obscured from observers and often from participants.

For example, during observers' conversation with a StratTech employee and Cyber Ninjas attorney Bryan Blehm regarding the infrastructure, security, and transparency concerns, Blehm told observers directly that this exercise was not a certification of the election or its results and added that the contractors could determine the level of transparency to provide.

Observers were also informed that Cyber Ninjas CEO Doug Logan and Bryan Blehm both instructed participants not to talk if/when official observers were near them, and that code words were used by participants to warn others that the Secretary of State observers were in the area.

With concerns about the lack of transparency around the aggregation process mounting, observers asked for demonstrations. When observers requested copies of the procedures, they were informed that the procedures were in "draft form" and not subject to disclosure—although these procedures had been printed and distributed to participants as a working guide for performing the aggregation duties. When observers directed this request to Senate Liaison Ken Bennett, he replied, "I have been asking for the same thing," illustrating that the process was unclear to both the observers and to Bennett himself. Observers noted this as an indication that it was, in fact, the contractors in control of the operation—not the Arizona Senate.

Security guards blocked observers from tours of the operation given to delegates from other states. The observers added that the contractors would speak in a manner that would prevent the observers from hearing what was being said on the tours. Observers were told that this was a COVID-19 protocol and the observers could not stand within 6 feet of the delegates. However, this policy was only selectively enforced, as all of the delegates were huddled together, the contractors were within 6 feet of the delegates, and the non-Secretary of State observers were allowed to be within 6 feet of the process.

## **Security**

### Cybersecurity Concerns

Both physical and cybersecurity concerns plagued the entire exercise. Basic tenets of cybersecurity dictate that users do not use shared accounts, do not share passwords, and do not write down passwords. These basic standards are implemented for several reasons, including for the protection of data integrity, which is of critical importance.

Violations of these cybersecurity foundational principles provide opportunities for computers to be accessed by unauthorized personnel, including bad actors, who may intentionally, or unintentionally, alter data, such as vote tallies.

During the first few weeks of this exercise, observers noted an alarming failure to comply with basic cybersecurity standards that protect data integrity. Data was collected and initially stored locally on the computers at each of the following stations: 1) paper examination tables, where participants took pictures of the ballots and 2) aggregation stations, for compiling the tally sheets completed by counters.

The Senate contractors set up stations for different parts of the counting process. This is problematic for two reasons: 1) any bad actors with access to the computers, or to the passwords for those computers, could change and manipulate data in the spreadsheets without anyone else being able to track it; and 2) the data could be lost without consistent backups. With the data being stored locally, there were no redundant copies of the information to ensure that any lost or altered data could be recovered.

For example, the observers were informed that the spreadsheets being used to store the tally data were stored locally on the computers. The data was only backed up to the server once daily, and, as part of the backup process, the server created a hash of the file for an integrity check. However, because this only happened once a day, the hash could be altered several times without detection. Further compounding the situation was the lack of logs created on the files, except a general log of which Windows account accessed the file, along with a date stamp.

The observers recognized this as a significant security concern. Each day, multiple people had access to each computer. With two shifts, at least two people were typically entering data on each computer. Additionally, with a single Windows login on each computer and a shared password that dozens of people have, any worker could log into a computer. Observers alerted personnel about this security concern. They described the following example:

Data Entry Shift 1 personnel enters data into Spreadsheet A, B, and C during the shift. Then, Data Entry Shift 2 personnel opens the same Spreadsheet A, B, and C, and modifies the tallies, then continues on with Spreadsheet D, E, and F, as s/he was tasked.

The observers inquired about how changes to the data could be detected using this process, and they were informed that the computers have cameras on them. Observers had previously been informed that those cameras were not monitored in real time, but could be reviewed if an incident occurred.



In another cybersecurity concern, observers discovered a device connected to the server that looked like a wireless router with the name “Netgear” printed on it. Observers were able to confirm that the device was a wireless router and that it was physically connected to an ethernet port for a switch to the servers capturing the ballot counting station video recording footage. Observers were told that the WiFi function of the router had been disabled.

However, this device can be configured as an access point, allowing anyone with another WiFi-enabled device to attach to the audit network from some distance, even in areas off-camera. Observers were assured that the device would be removed from the floor, but it remained connected until May 14, 2021, when the exercise was forced to pause while pre-scheduled events were conducted at the review venue space in the Coliseum.

Observers noted that multiple Wake TSI subcontractors, and other participants, had usernames and passwords written on a purple sheet of paper which they carried in their pockets. This was another significant security vulnerability which indicated a lack of understanding or adherence to best practices for network and data security. Observers reported more than six staff members carrying the list of passwords, participants holding password sheets facing outward so that they could easily be seen, and several participants handing the password sheets to other participants.

In June, observers noticed the manufacturer boxes for the “Ankylin WiFi Microscope” portable cameras used on the paper examination stations indicated they were WiFi capable. The security team scanned each of the paper examination stations with a radio frequency reader. For nearly 15 minutes, each time that the security team placed the radio frequency reader near the microscope cameras, the reader detected a steady stream of transmission. The observers noted that the computers showed that there was no internet connection, but until the June 17 discovery, the observers were unaware that the microscope cameras had built-in WiFi that connects to Apple and Android products via an app. Having WiFi-enabled microscope cameras that transmit data to Apple and Android products created a vulnerability, which could have allowed a bad actor using an unauthorized and undetected device to access the ballot images captured by the cameras.

### Physical Security Concerns

Security concerns went beyond hardware and software to include physical security matters. For example, on May 14, 2021, the day the contractors had to pause operations and move equipment from the Coliseum, observers noted much confusion among participants moving equipment, including the server, onto a trailer for storage while the Coliseum was used for high school graduations. Contractors decided to lock

the equipment trailer, but not use a tamper-evidence seal because the data being stored was “not evidentiary.” Both Logan and Blehm agreed that tamper-evident seals would be “overkill.”

At this time, the driver of the truck and trailer walked around to the back and put in the combination to unlock the trailer. Access to the content in the trailer was supposed to be limited, yet even the driver had the combination to the lock. This security vulnerability was witnessed by an observer and an Arizona Ranger on site for security purposes. The driver later stated that the lock was not his, but belonged to his boss, and that the combination was “3030.” Shared locks and combinations are a major security vulnerability. Shortly thereafter, Doug Logan decided that sealing the trailer would be appropriate, but still did not make an effort to get the seals and put them on the trailer. Instead, the Arizona Ranger left the site, got two seals, and returned to seal the trailer.

### Internal Security

The contractor’s overall lack of election administration comprehension resulted in several other security issues. In Arizona, voters who qualify under the Uniform and Overseas Citizens Absentee Voting Act (UOCAVA), including military members serving our country, may return their completed ballots electronically. Observers noticed that the contractors treated these ballots with less care, and overheard comments made by the contractors indicating that they believed these were not legitimate nor official ballots.

This dismissive treatment of these ballots again indicated a lack of understanding of election processes, as these were valid ballots voted by active members of the military. In one instance, observers reported seeing Bennett and several other contractors rifling through boxes of UOCAVA ballots. In two separate instances, the UOCAVA ballots were poured out of containers. In the first instance, the ballots were not handled with care, resulting in the UOCAVA ballots being unceremoniously dumped across a table.

The second time, Bennett, and several other participants toppled a box of UOCAVA ballots, spilling them across the Coliseum floor. When returning the ballots to the box, they failed to check the number of ballots returned to the box to ensure that no ballots had been lost or misplaced.

Additionally, some of their own security protocols were blatantly ignored—access to the different cages was supposed to be limited to certain individuals. Observers reported, however, that while initially only the table managers or runners could take custody of the ballot boxes from the secure cages, at some point, this security measure was disregarded entirely. Eventually, all participants were allowed to take custody of the boxes of ballots and remove or return them to the secure cages.

The Senate Cage held all of the data that was sensitive, such as personally identifying information. This cage was originally only accessible by Bennett. During Phase 2, access was also granted to Randy Pullen, the former Chair of the Arizona Republican Party, who the Senate suddenly identified as “Audit Co-Chair” when the review resumed, on May 24, 2021.

On a separate occasion, the observers saw Bennett access boxes of “spoiled” ballots from the Senate Cage and noticed that when Bennett unlocked the cage, he set the combination lock on the floor outside the cage. Observers clearly saw the readily visible code on the lock, which was set to “6404.” Observers confirmed that the code showing was correct because Bennett picked the lock up, placed it back together, and then turned the combination of numbers to relock the lock. The poor security practices that continued to be an issue with the contractors alarmingly included lapses in protocol to protect voters’ personal identifiable information.

#### Inconsistently Applied Access and Security Restrictions

The Secretary of State observers’ access was often subject to change. On April 30, 2021, the head of security told two Secretary of State observers that “per the Secretary’s Office,” the observers were no longer authorized to observe. After an approximately thirty-minute delay, the observers were told that the Secretary had not revoked their designation, but, in order to access the Coliseum, they needed a formal letter from the Secretary’s Office. Upon admittance, Cyber Ninjas representatives instructed the observers that the rules had changed, and observers were no longer permitted to have technology (i.e., computers or phones) on the floor; however, they could bring a yellow notepad and red pen on the floor. Observers noted many instances when the security restrictions were blatantly disregarded by the contractors. For example, observers were told that no computers were allowed on the floor, yet they noted several computers on the floor, including at paper examination stations and at the aggregation stations. Also, observers were told no personnel could have phones on the floor. However, the contractors were not prohibited from using their cell phones on the floor.

#### Inconsistently Applied Policies and Procedures

In the instances where policies and procedures existed, the contractors regularly failed to comply with them. Observers were told that photography was prohibited. When observers informed Blehm that a contractor was violating this prohibition, Blehm approached the representative, who immediately put the phone away. When Blehm left, the contractor immediately retrieved the phone and again began taking photos.

Observers asked Blehm about the incident, who said that the employee had been instructed not to take photos but he took them anyway. Another Cyber Ninjas representative asked Blehm about the incident, at which point Blehm ran to the observers to inform them that he instructed the representative who took the photos to delete them. In a similar incident, Bennett was inside the cage taking photos of the last regular box of ballots being taken out onto the counting floor to be counted, and observers noticed that reporters were taking photos of Bennett on the counting floor using his phone to take pictures.

### Chain of Custody Concerns

The term “chain of custody” is not unique to elections. In a court of law, it refers to evidence and the sequence of gaining custody of that evidence along with its control, transfer, examination, and final disposition when admitted into court. Proving that an item has been properly handled through an unbroken chain of custody is a required component of any credible audit. It assures a court of law that the evidence is authentic and was never unaccounted for. The chain of custody during an audit should provide the same assurances that ballots are authentic and accounted for as ballots are:

- Transported
- Reviewed
- Moved between stations, and
- Stored

Chain of custody logs document a ballot’s journey through the audit process. They provide evidence to relieve any uncertainty that ballots have been tampered with by indicating when and who took possession of them each time they are physically moved.<sup>85</sup>

Chain of custody issues were observed throughout the process. For example, observers noted that some boxes containing personally identifiable information were removed from the Senate Cage, which was supposed to have the most robust security features, into the cage with all other ballots with comparatively open access. The following day, more boxes were moved from the Senate Cage. Chain of custody forms were not included on these boxes. Observers also noted multiple occasions when folders of tally sheets and corresponding chain of custody sheets were left unattended at quality control stations—the area and computers designated for quality control processes to take place—as the data was re-entered into spreadsheets for the “Phase 1 Retrospective Quality Control.”

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<sup>85</sup> Morrell, J. (2021, February). *Knowing It's Right, Part Four Ballot Accounting Audits Best Practices Guide*. [https://democracyfund.org/wp-content/uploads/2021/02/2021\\_DF\\_KnowingItsRight\\_Part4.pdf](https://democracyfund.org/wp-content/uploads/2021/02/2021_DF_KnowingItsRight_Part4.pdf).



The number of ballots being processed at a station was not tracked at all, making it impossible to ensure that no ballots had been added or lost during handling.<sup>86</sup>

### Other Security Concerns

Many of the concerns the observers noted stemmed from the fact that the contractors and participants seemed to have little knowledge of election laws or best practices. For example, Deputy Senate Liaison John Brakey publicly stated that he was receiving copies of all the ballot images and expected to post them all publicly. This action would be a violation of the settlement agreement<sup>87</sup> and of Arizona law<sup>88</sup>.

### **Lack of and Inappropriate Communication**

Cyber Ninjas' representatives consistently refused to provide information requested by observers and/or provided inaccurate information in response to questions about the procedures, processes or planned work schedule. Throughout the process, observers found that for the most part, their presence was not welcome in the Coliseum. Ongoing communication issues made it clear that the intent of the contractors is not to provide clarity regarding their actions, but instead to obfuscate processes and procedures.

Additionally, the Senate's contractors cultivated and contributed to an environment in which the Secretary's observers were treated unprofessionally. The following are examples of the observers' interactions with floor staff and volunteers:

On multiple occasions, the Senate's contractors, Bennett, or Deputy Senate Liaison John Brakey asked the observers for assistance. Observers were regularly shocked by the Senate's contractors' demonstrated lack of understanding about elections and Maricopa County's processes. Furthermore, on multiple occasions, observers were asked to provide the contractors with copies of their notes and information on the errors in the process, so that they could fix them immediately, rather than having to change procedures after learning about the concerns from the Secretary's correspondence with the attorneys.

The contractors, attorneys, and Senate Liaison continuously provided inconsistent information that regularly failed to comport with the instructions provided to observers or with the processes and procedures provided to the participants performing the review.

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<sup>86</sup> Morrell, J. (2021, May 21). *I watched the GOP's Arizona election audit. it was worse than you think.* The Washington Post. <https://www.washingtonpost.com/outlook/2021/05/19/gop-arizona-election-audit>.

<sup>87</sup> Settlement Agreement, *supra* note 73.

<sup>88</sup> A.R.S. § 16-1018

While the Senate's contractors and Bennett frequently told observers and media that the working participants were mostly volunteers, the observers noted that sign-in sheets, filled front and back, for paid staff were provided daily. In contrast, when observers asked if operations would continue on Memorial Day, they were initially informed that they would, because most workers were paid independent contractors. In fact, a contractor told an observer they were actively trying to keep volunteers from knowing that others were being paid to do the same job.

Observers were often mocked, sometimes blatantly; Secretary of State Observers were called "pinkos" for the pink shirts which contractors required them to wear and which were specifically assigned to these observers ("pinkos" is a pejorative term from the 1920s for people that were sympathetic to communism).



Pullen told one observer that the shirt which he was required to wear on the floor made him "look like a transgender."

However, some participants expressed gratitude to the observers. One participant told an observer: "I've been wanting to tell you I am thankful that you are here." Another stated, "thank you for the great work you are doing."

Additionally, at one point, a Senate contractor advised the Secretary's observers to get into the business of consulting for forensic audits because this exercise would create business for years to come.

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<sup>89</sup> Photograph: Courtney Pedroza/Getty Images



## Ballot Counting Process

Effective and trustworthy hand tally procedures are typically written prior to the launch of an audit, and used for training purposes. They remain consistent throughout the process, and help ensure an accurate count of votes cast for individual candidates.

These procedures require each ballot to be individually reviewed by a team of two or more officials. This is often a slow, methodical process marked by regular pauses in counting, often after five or 10 ballots, to verify accuracy. Election officials are trained and provided with instructions on how to count ballots with unclear marks, and typically receive a state guidebook with pictograms.<sup>90</sup> Standard hand count tally procedures include clear escalation procedures for any ballot that the team of officials cannot agree how to count. This procedure ensures that ballots without clear marks receive additional scrutiny and are accurately counted.

The Senate's contractors' tally process failed to include an escalation procedure, and was more similar to an opinion poll—only soliciting opinions of how the ballots should be counted—than it was to effective ballot hand count procedures used by officials across the country. The procedures did not require the people counting to agree on how to count individual ballots. In fact, the procedures do not even require the counters to agree on the aggregate totals for ballots in a batch. If opinions differ on the aggregate totals (within an error rate that varied by day and/or table), then there was no attempt to ensure that individual ballots are counted accurately.

The Senate's contractors refused to provide written procedures prior to the start of the hand count. When a court subsequently compelled them to produce written procedures, meta data indicated that these procedures, "Counting Floor Policies," (the "Policies") were written days after the start of the hand count on April 28, 2021. After the procedures were written, the counting table staff were observed routinely failing to follow, or saying that they were unaware of, the applicable written procedure(s).

Moreover, the procedures and policies changed multiple times before and after they were put in writing, despite the lack of a formal procedure change process or notification requirements. When observers noticed a process change, for example, the change in the number of ballots per batch from 100 to 50, and asked the Senate's contractors to explain the change, they provided various rationale for the change, but did not provide a copy of the revised procedures or insight into the the process used to identify, consider

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<sup>90</sup> Arizona Election Procedures Manual Chapter 11, Section IX  
[https://azsos.gov/sites/default/files/2019\\_ELECTIONS\\_PROCEDURES\\_MANUAL\\_APPROVED.pdf](https://azsos.gov/sites/default/files/2019_ELECTIONS_PROCEDURES_MANUAL_APPROVED.pdf)

and adopt these changes. Clear procedures that are consistently applied are critical to obtaining reliable vote tallies.

## **Hand Tally Process**

The ballot-counting process conducted at the Coliseum consists of two main parts: 1) a hand tally of voter selections for two selected races (President and U.S. Senate); and 2) the aggregation of votes recorded on the hand tally forms.

### **The hand tally procedures were not designed to result in an accurate count.**

Round tables, outfitted with a large rotating tray on which two ballot display easels were mounted, were designated as “counting tables.” Each table was staffed with three counters and one or two table leads. Table leads handled the ballots and prepared them to be tallied by counters by placing the ballots on the rotating tray and spinning it around the table.

Each counter was provided with an individual tally sheet for each “batch” of ballots. Counters were instructed to review marks on the ballot for two races: President and U.S. Senate. To complete the tally sheet, they were to put a hash mark in the appropriate column (e.g., Trump, Biden, or Jorgensen; Kelly or McSally). There was also a single column for overvotes, undervotes, and write-in votes in both races—standard industry practice calls for each of these ballot marks to be tracked separately, not jointly. Each row of the tally sheet allowed for the results from five ballots to be logged, which allowed for the entry of 100 ballots on each tally sheet.

The observers reported many concerns regarding the tally sheets, such as:

- The Senate’s contractors informed observers that all tally forms will be maintained. If errors occurred, the sheets would be voided, but none would be destroyed or discarded. However, observers did see tally sheets being torn in half and discarded.
- Some table managers instructed the counters not to tally the number of ballots on the tally sheet, saying that the “Ballots” column was optional and filling it in would slow the process.
- Observers also noted that when conducting a recount, some counters used scratch paper to write down the tallies for the recount instead of using the tally sheets. This was a violation of policy and does not fit the concept of treating the tally sheet as “legal documents.”
- Observers noticed that manila envelopes were placed on many of the counting stations. Blehm told observers they were added as an underlayer to the tally sheet because some of the tables had staples or other items that made their

surface difficult to write on. However, observers documented multiple instances of scratch paper being used for recounts.

- Observers saw multiple instances of table managers failing to get consensus on the tallies among the counters. If there were two out of three matches, then the result of the two was considered to be “good enough.”<sup>91</sup>

## Hand Tally Error Rate

While the written policies require batches of 100 ballots, in practice, there were a variety of circumstances that resulted in batches of under 100 ballots. For example, when the total number of ballots in a box was not divisible by 100, the last batch counted in that box would typically have fewer than 100 ballots, and when, according to the Senate’s contractors, table leads were given discretion to decrease batch sizes to 50. Counters were not permitted to touch or handle the ballots, nor were they permitted to discuss any questions about the ballots or marks thereon.

After marking tally sheets for the last ballot in the batch, counters were instructed to sum the hash marks and enter aggregate totals in each column. Table leads were responsible for reviewing the tally sheets completed by each counter. This review was limited to comparing the aggregated vote totals and did not include a review of whether the counters agreed on how to count individual ballots. Although the counters reviewed the same ballots, the procedures did not require the counters to agree on how to count individual ballots.<sup>92</sup> Moreover, the procedures did not require the counters to agree on the aggregate vote totals for candidates for each batch.

If, at the end of the batch, the aggregate totals of two of the three counters matched, and the aggregate totals of the third counter were within two votes of the matching aggregate totals, then the batch was considered complete and the table moved to the next batch.

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<sup>91</sup> While this is the documented procedure, it is a concern when the table manager is aware that the number of ballots that an individual counted is different from the number that the other two individuals on that table counted (e.g., if one counter had the number of total ballots equaling 100, but the third counted 99 or 101 ballots). During the process of re-entering the tallies from Phase 1 into the spreadsheets, there were multiple instances where this lack of consistency was evident. One observer witnessed, in Yellow Module 2, one counter state, “I give up, I already have 80,” when the other two and the leader said they were only on ballot number 79. The counter said, “Oh well, we only need two out of three,” so the table manager allowed them to continue. At the conclusion of the batch, the counter acknowledged being off by one still, and said “why bother” fixing it if they match.

<sup>92</sup> In fact, there was no process for comparing how individual ballots were counted by the three table counters, and the tally sheets were not designed to enable this comparison. Because of this, it would likely not be possible to obtain a complete count of ballot interpretation discrepancies between table counters.

If the tally sheets did not meet this standard, it was the responsibility of the table lead to determine which row or rows (of five ballots) resulted in the discrepancy. Written procedures then called for the table lead to have all three counters review the relevant ballots again. If the aggregate totals were not within the permissible error rate after 1-3 reviews, the table lead would have the table recount the entire batch.

As there were no standards in place for addressing any discrepancies, recording the tally often came down to the opinion of the table lead.

The fluctuating batch size was a significant concern because it created an unacceptably high potential for error, or error rate. The authorization to create an error rate for the hand count procedures was established in Section 5.2.2 of the Cyber Ninjas' Statement of Work.<sup>93</sup> This error rate was incorporated into the *Counting Floor Policies*. However, the relevant written policies were poorly drafted and resulted in a much greater error rate than was authorized in the Statement of Work.

Policy No. 8 requires that "the ballot counting teams must be accurate to within 0.03%."<sup>94</sup> However, the explanatory text describes an error rate (of approximately) 3%—not .03%.<sup>95</sup> Specifically, the procedures call for ballots to be counted in batches of 100, and allow for vote count total discrepancies among counters of up to, but not including, three votes. In practice, the table counters consistently complied with the error rate as expressed in a total number of ballots (up to, but not including, a discrepancy of three). However, they failed to consistently use batch sizes of 100 (e.g., according to Blehm, Table leads were provided with discretion to determine batch size, and could use batch sizes of 50.)<sup>96</sup> Of course, when the number of ballots in a batch

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<sup>93</sup> Cyber Ninjas, *supra* note 48. ("5.2.2 Accurate Counting will be done in groups with three individuals independently counting each batch of ballots, and an individual supervising the table. All counts will be marked on a sheet of paper as they are tallied. If, at the end of the hand count, the discrepancies between counting personnel aggregate to a number that is greater than the margin separating the first and second place candidates for any audited office, the ballots with discrepant total from the Contractor's counting personnel will be re-reviewed until the aggregate discrepancies within the hand count are less than the margin separating the first and second place candidates.")

<sup>94</sup> Wake TSI. (2021). *Counting Floor Policies*.  
<https://www.cyberninjas.com/static/20210429155650/Wake-TSI-Counting-Floor-Policies.pdf>.

<sup>95</sup> *Id.* at 6. ("If two of three counters totals agree but the third counter is off 1 or 2 votes in any one race, the tally sheets are sent to aggregation. If two of three counters' totals agree but the third counter is off by 3 votes in any one race, the ballots must be recounted.") *But see* Election Assistance Commission. (2005). Voluntary Voting System Guidelines Volume II, National Certification Testing Guidelines. [https://www.eac.gov/sites/default/files/eac\\_assets/1/28/VVSG.1.0\\_VOL\\_2.508compliant.FINAL.pdf](https://www.eac.gov/sites/default/files/eac_assets/1/28/VVSG.1.0_VOL_2.508compliant.FINAL.pdf). ("For each processing function, the system shall achieve a target error rate of no more than one in 10,000,000 ballot positions, with a maximum acceptable error rate in the test process of one in 500,000 ballot positions.")

<sup>96</sup> The process allowed table managers to decide if the table tally 100 ballots on a tally sheet or to stop after the 50th ballot to subtotal and check for errors. For example, on May 10, 2021, a person loading the ballots onto the carousel of Blue Module 4 spun the 51st ballot around and the counters asked her to stop so that they could subtotal. Her response was "I don't usually subtotal at 50," but that is what the counters



size decreases, but the number of ballots used to determine if there is an impermissible discrepancy remains the same, the effective error rate increases. For example, when batch sizes of 50 ballots were used, the effective error rate was double the error rate of when batch sizes of 100 were used.

Moreover, as the hand tally process does not require agreement on how individual ballots are counted (only the aggregate totals), the estimated maximum number of potential ballot tally errors does not include potential tally errors on individual ballots. This means that each hand tally participant is using their own “standard” for how votes are to be counted, with no clear, consistent, and repeatable instructions in place. This is in stark contrast to the federally required standard for states to establish regulations on what counts as a vote and what does not<sup>97</sup>. This process failure is fatal to the entire endeavor and no count resulting from this process should be relied upon for any purpose, other than as an example of procedures that should not be used.

### **Ongoing Process Revisions and Changes**

Effective and trustworthy hand tally procedures are ideally written and used for training prior to the start of an audit. They remain consistent throughout the entire process. The Senate’s contractors’ process failed to comply with both of these standards. First, the hand tally began before written procedures were shared and were only made available after litigation. More troubling, implementation of the procedures as written was inconsistent, and changes were made to the procedures regularly and in the middle of ongoing processes. Many of the modifications to the procedures came after the Secretary of State or observers held a press briefing or released notes identifying all of the errors being observed or identified by staff. The hand tally process changes impacted the quality and accuracy of the vote totals that were generated by the contractors through this process. An overview of some of the major changes is provided below.

### **Initial Hand Tally Procedures**

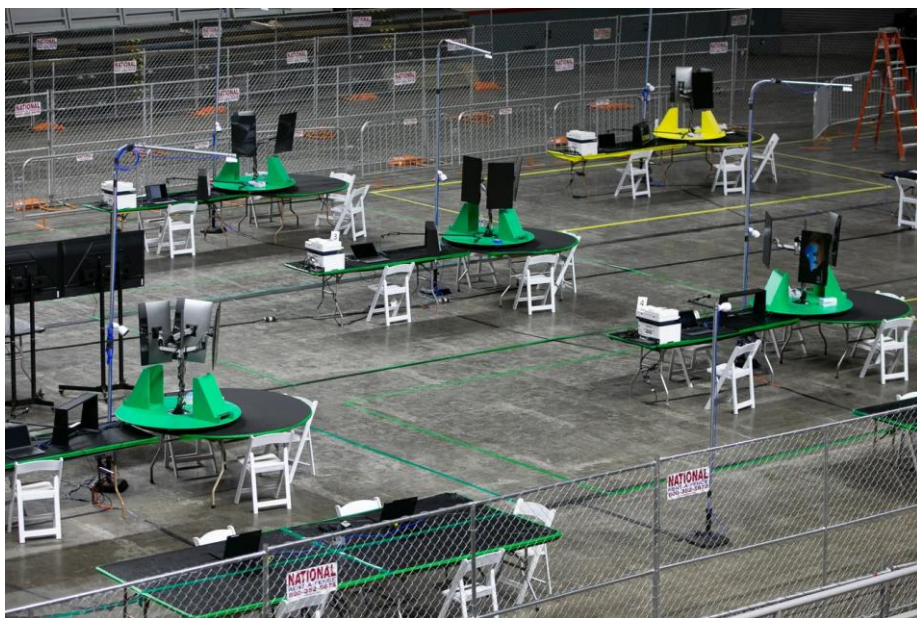
At the launch of the exercise, individual ballots were scanned and digital images were displayed on a computer screen, which was visible by all three table counters at each round table. Counters were instructed to first compare the paper ballot on the turntable to the digital image on the screen to confirm that it was the correct digital image, then to review the marks as they appeared on the digital image for vote-tallying purposes.

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were used to doing, so the comment caused confusion. Other table leads said that they would not stop and subtotal at 50 ballots; rather, they would just count batches of 50 to make it easier on the counters.

<sup>97</sup> 52 USC § 21081(a)(6) (“Each State shall adopt uniform and nondiscriminatory standards that define what constitutes a vote and what will be counted as a vote for each category of voting system used in the State.”)

Observers noted that the hardware and software used were not federally or state-certified, nor had it undergone testing by an accredited laboratory.



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After this process had been in use for approximately one week, the contractors revised the process (by striking the procedures related to scanning the paper ballots) and told observers that the process was inefficient and confusing. A Senate observer later told Secretary of State observers that the ballot scanning process had been abandoned because the contractors performed a software update which resulted in the loss of all of the ballot images.<sup>99</sup>

### Revised Hand Tally Procedures

After ballot scanning ceased, the hand tally procedures relied solely upon review of individual paper ballots using a turntable, on which hundreds of ballots were spun past table counters who struggled to mark, on a tally sheet, each voter's selection for the presidential and Senate races. Each round table was staffed with three counters and one or two table leads. Table leads handled the ballots and prepared them to be tallied

<sup>98</sup> Thomas Hawthorne/The Republic

<sup>99</sup> Based on the information provided, it seemed that the data was being stored locally within the software application, and the update wiped out all previous information. While this theory could not be confirmed, Blehm confirmed that there were some reasons why all ballots that were previously scanned would need to be rescanned. However, the boxes and batches of ballots that had been tallied using this method would not be retallied using the new procedures that all other ballots would be tallied under. This was the first of several instances identified throughout this report where a portion of the population of ballots being recounted was recounted using different practices. Tranches of ballots were counted differently from all other ballots because multiple changes to process were implemented and not replicated on the ballots that had been previously counted.



by counters, which included placing the ballots on the turntable and spinning it. Each counter typically had only a few seconds, or less, to record what they saw.<sup>100</sup> Occasionally, a counter would look up, realize that they had missed a ballot, and then grab the wheel to stop it.<sup>101</sup> Speed does not necessarily pose a problem if the audit has a process for catching and correcting mistakes. This exercise, however, lacks that hand tally process.

Due to the previously mentioned accepted error rate, the batch was considered complete if two of the three counters' tallies matched, and the third was off by no more than two ballots. According to the *Policies*, the table counters were to recount the batch only if there were vote tally discrepancies when comparing their tally sheets of three or more votes. While some table leads complied with this policy and instructed the table counters to recount when there were too many errors, other table managers just instructed the counters to "fix" their "math mistakes" (requiring individual table counters to double- and triple-check their math).<sup>102</sup>



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## Voter Intent

The staff performing the counting were not provided with a copy of the Arizona state laws or procedures<sup>104</sup> that govern voter intent rules. Each member of the counting crew were told to look at the ballot and determine for whom they believed the voter intended

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<sup>100</sup> Morrell, *supra* note 85.

<sup>101</sup> *Id.*

<sup>102</sup> *Id.*

<sup>103</sup> Matt York/AP

<sup>104</sup> Arizona Procedures Manual Chapter 11, Section IX

[https://azsos.gov/sites/default/files/2019\\_ELECTIONS\\_PROCEDURES\\_MANUAL\\_APPROVED.pdf](https://azsos.gov/sites/default/files/2019_ELECTIONS_PROCEDURES_MANUAL_APPROVED.pdf)

to vote. Process and procedures state that counters are not allowed to speak with the table managers or other staff when they are unsure of the situation; they must determine what they perceive the voter's intent to be without any instructions, conversations, or procedures.

Throughout the counting process, the majority of issues raised by the counters had to do with how to interpret marginal marks (e.g., when an oval is not completely filled-in), overvotes, write-ins, and undervotes. Also, because the Senate's contractors consider overvotes, undervotes, and write-ins as equivalent (i.e., these are combined on the tally sheet), there is no accuracy around this process and no ability to resolve discrepancies.

### Duplicated Ballots

Many states, including Arizona,<sup>105</sup> have election officials "duplicate" certain ballots that cannot be read by a voting machine. For example, they may be torn, damaged, or stained, military and overseas ballots submitted electronically, provisional ballots in which the voter voted out of precinct, braille ballots, etc.<sup>106</sup> In these instances, ballots are generally duplicated by bipartisan teams<sup>107</sup> that verify that the duplicate ballot matches the respective candidates and contests from the original ballot the voter used. Then, the original ballot and its duplicate ballot are marked with a unique and corresponding serial number, an indicia mark, so the two ballots can be joined. The original ballots are then saved and the duplicate ballots are scanned and counted. Ordinarily, in an audit that requires a manual review of ballots, if the duplicated ballot is selected for the audit, the original will also be retrieved to ensure that voter markings were transferred correctly. In a recount, only the duplicated ballot will be rescanned or recounted. There are no known situations where any election official would count both the original ballot and the duplicated ballot. The only purpose for consulting the original ballot is to ensure that the voter markings were accurately transferred.<sup>108</sup>

The Senate's contractors determined a process for tallying these ballots, after observers noticed damaged ballots spinning on a rotating tray, and inquired about it. The process, reportedly, was to tally the originals, but the tallies would not be included in aggregation. Soon after, observers were informed that the process had been modified. The new procedure was to count, tally, and aggregate the results of the original ballots, which

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<sup>105</sup> ARS § 16-621(A)

<sup>106</sup> *Id.*

<sup>107</sup> Arizona Election Procedures Manual, Chapter 10 Section II ("Each Ballot Duplication Board shall be comprised of at least two members who are registered voters not of the same political party").

<sup>108</sup> *Id.* ("Place all original ballots in an envelope or container labeled 'ballots that have been duplicated'...It is never permitted to enhance or alter a voter's original ballot markings to render the ballot readable. Instead, the ballot should be duplicated.")

Maricopa County does not use for tabulation, instead of the duplicates, which Maricopa County does use for tabulation.

Observers also heard participants being instructed not to aggregate duplicate ballots and to handle other provisional ballots as regular ballots. Later, observers were told that tallies from the provisional ballots would be entered into a separate spreadsheet. It was unclear if Cyber Ninjas intended to include any of these in the aggregation process. The lack of clarity from the start about how to handle provisional ballots was quite concerning, especially as the policy appeared to change frequently.

Alarming, observers heard Senate Liaison Ken Bennett say that he “doesn’t know why provisionals would be duplicated. I have never seen a provisional [ballot] that needs to be duplicated.” As Bennett was the former chief election official in Arizona and the person providing election expertise consulting on the process, this remark was cause for concern among observers. There are as many potential reasons for a valid provisional ballot to be duplicated as there are for regular ballots to be duplicated.

An additional process related to the original and duplicated ballots was implemented in June. Observers noticed two teams of data entry participants at a paper examination station with military and overseas ballots and damaged ballots. The observers noted that the ballots were not being photographed, as had been done previously. Instead, the information was being entered into a spreadsheet. The Senate’s contractors explained that this new process entailed documenting the indicia number, the vote for President, and the perceived rationale for why the ballot needed to be duplicated. Also, duplicated ballots would be entered along with the indicia number and the vote for president, and compared to the information entered from the original ballot. Although some of the tallying was done on camera, observers noted that the data-entry process was not, creating an opportunity to alter the data.

### **Ballot Box Storage**

There was no consistency in how the Senate’s contractors labeled and stored the boxes of ballots. In the “Completed Cage,” some boxes were labeled as “Counted, Complete” while other boxes were labeled as “Counted, Examined, Complete.” Blehm said that “Complete” meant that the quality control process had been finished. This was obviously inaccurate because quality control had not yet begun. When the observers called this to his attention, he responded with, “keep coming back and you’ll see it start.”

The matter of which cage a box of ballots was stored in was also inconsistent. Blehm had described to the observers that a box of ballots will not go into the “Completed Cage” until all counting and paper examination had been completed and that no other

examinations were needed. Later, the “Hand Audit Batch 19 of 52” box had been moved from the “Completed Cage” to the “In Process Cage.” When an observer asked Bennett about this, he stated that once a box was in the “Completed Cage,” it should not be removed. He did not have an explanation for this.

## **Aggregation**

Aggregation is the process of compiling the individual tallies into the final results. The process should be clear, with established procedures that ensure checks and balances, and quality control processes. Data entry is a very tedious task that is ripe for errors.

There were no publicly-available procedures for the aggregation process. The observers consistently requested information about how the three separate tally sheets for every single batch would come together into a single set of results, but this was never provided. When the observers were authorized to bring a monocular so that they could see the data entry being conducted at the aggregation stations, participants routinely obfuscated the view, preventing meaningful observation of the data-entry and problem-resolution procedures. The Senate’s contractors refused to provide observers with access to or detailed information about the aggregation process, databases, or spreadsheets (including macros).

Observers witnessed the Senate’s contractors rushing to develop instructions, spreadsheets, and Access database(s), while changing multiple portions of the process. Operational consistency is critical for aggregated data to be considered reliable. The Senate’s contractors failed to provide consistent processes or ensure that their entire team was aware of process changes occurring.

### **Aggregation Data Entry**

Standard best practice for tallying data for election audits requires two-person bipartisan teams to enter the data. This provides an opportunity to detect errors in data entry. Aggregation was the most opaque portion of the exercise conducted at the Coliseum.

The most consistent aspect of the counting process was that all three tally sheets for each batch were entered into spreadsheets. Data entry was performed by multiple participants. The tally sheets were brought from the counting tables to the aggregation station by a runner, who would “check in” the tally sheets. During the check-in process, tally sheets were reviewed and placed into color-coded boxes. Participants doing data entry would retrieve the spreadsheets from these boxes and enter the information into a



spreadsheet. When the data entry was complete, the tally sheets were stored in boxes. However, this process was modified multiple times, creating complexity, confusion, and duplication of efforts.

Observers also realized that each of the data entry personnel were required to write on the tally sheets using a red pen, presumably to identify themselves as the reviewer. This was an immediate concern, since red pens were also used by the counting tables to designate an error or change. For instance, if a counting member made a tally mistake, they would cross it out and correct the error in red ink. Since each data entry personnel member is required to write on the tally sheets, a person could strike through the tally at the aggregation station and update the totals. This would be indistinguishable from the marks of the counter, creating another opportunity to manipulate the totals without detection.

Beginning on May 12, 2021, a group of staff began scanning tally control sheets and tally sheets onto a thumb drive. Prior to this, the tally sheets were only kept in a hard copy format. The explanation for this new process was twofold: 1) to make it easier to search for a specific tally sheet in case it needed to be reviewed, and 2) as an integrity check (i.e., so that the sheet could not be manipulated later, as previously described). The lack of clarity in the chain of custody for the tally sheets being scanned and the use of red pens were both major flaws in this process.

These flaws would make any manipulation of the tally sheets prior to scanning virtually undetectable and could produce manipulated evidence electronically. The observers also noticed that after scanning was completed, it had to be replicated after the pause in operations that occurred on May 14. Furthermore, once the new aggregation system was developed, the tally sheets had to be rescanned for a third time so that the tally sheet could be linked to the data that had been entered into the spreadsheet.

## **Process Used**

During Phase 1, Blehm and Bennett told observers multiple times that a CPA firm would conduct the data aggregation. Observers were also told that aggregation had not started and that there were no procedures for aggregation because it was being outsourced. This is not a standard practice. However, when observers attempted to confirm this information, subcontractors from Wake TSI and from StratTech indicated that it was inaccurate.

Further, Kern explained that there were two databases and that each had the same data that ran through separate software. This allowed the Senate's contractors to compare the data in the two databases to compare the outcomes. Observers were



informed that “dozens of pages” of policies and procedures were written on the aggregation process and that procedures had to be modified to match StratTech’s system configuration. Observers requested a demonstration of the software. Instead, observers received a description of a process that did not match.

Observers were then told that there was only one software program and one database. The day before operations were paused, observers overheard someone asking if the aggregation software would even be used.

When Phase 2 began, after the hiatus, the observers noted no movement on the quality control or the aggregation processes. They did, however, notice that a new person was leading the aggregation process. And in early June, two more people began working on the master aggregation computer daily.

Additionally, in early June, observers noticed a crowd gathering around the master aggregation computer over what seemed to be a massive tallying error. Observers overheard one of the people in the crowd say that “it [would] take the rest of the audit” to correct the errors. After noticing that the observers were documenting the situation, the group moved to an area on the floor where observers were prohibited.

## **Quality Control**

During Phase 1, observers were told that “if [the quality control] hasn’t started yet, it will start soon.” The observer indicated that the process had not yet started, and the following week, the observer was informed that the quality control process would begin during Phase 2.

In late May, observers noticed that a new spreadsheet had been developed for data entry staff. Observers saw that one member of the staff was having significant issues with the new spreadsheet. He was attempting to drag the data from the matching cells, instead of re-entering the information. However, instead of dragging (i.e, copying) the information, he would move the information to the next cell. This was creating a red “#REF” error in the row in cells beside the data which he moved.

This was the first time observers saw this error. Observers asked about it and learned that Cyber Ninjas employees had applied an electronic quality check on the data, and believed that was sufficient.

This red #REF cell indicated that further review was needed. Observers also noted that the checks were looking for items such as, “do the total number of votes add up to the total number of ballots?”

This process did not check for transposed numbers, a common occurrence during a hand tally, if the tallies from the three counters matched, or if they were counting the same ballot. This was a drastically insufficient quality control check.

During the second week of June, observers saw a new set of printed instructions entitled “Phase 1 Retrospective Quality Control.” This was more than three weeks after the initiation of Phase 2, and more than a month after the observers had been told that the quality control stations and computers were set up. The observers were not allowed to obtain a copy of the “Phase 1 Retrospective Quality Control” procedures because the document was a draft, yet it was on each of the quality control stations and the data entry personnel were using it to rekey the data. Even though the document was titled “Quality Control”, the observers witnessed data entry personnel rekeying all of the tally sheets into the spreadsheet that was introduced on May 24.

There were no additional checks. Observers indicated that it seemed to be referred to as Quality Control because the participants were using the revised spreadsheet that included the feature that flagged mismatched numbers. Observers witnessed data entry staff putting all of the data from the Red Modules into the new spreadsheet. Observers were not able to ascertain what happened to the original spreadsheets. They were told that any errors that occurred at a counting station would be “corrected” in the spreadsheet.

In mid-June, observers noted a new process being referred to as "quality control." This process has three phases: QCC, QCT, and QCTR. Observers believed that these initials stood for Quality Control Count, Quality Control Tally, and Quality Control Tally Retrospective. Observers additionally noted that:

- The QCC or Quality Control Count process appeared to be an attempt to count the number of ballots in a given batch and in an entire box, and to compare it to the number of ballots that Maricopa County recorded on the batch sheet.
- The QCT, or Quality Control Tally, process required participants to complete the counting process again. This was done by spinning the ballots on the turntable again to get a new tally of the entire box of ballots.
- The Quality Control Tally Retrospective process was added on June 19, 2021. Observers were unable to ascertain what the process entailed.

Overall, there was no information available about how tally differences would be reconciled, recorded, or which of the tallies would be considered correct. This provides another opportunity for the results of the tally to be altered. Observers noted that quality control processes lacked integrity and further renders the results unreliable.

## Physical Examination

There may be instances in which a physical audit of the equipment will be reviewed in an election. As described earlier, Maricopa County brought in two independent firms to conduct forensic examinations of the equipment used in the election in order to check for any hardware or software on the machines that should not have been there. The forensic audits that were conducted found that the machines had not been tampered with. Nevertheless, the Senate Review called for examination of the machines, and also called for a physical examination of the ballots themselves. The paper examination process, also known as “paper forensic examination,” is an exercise that originated from debunked conspiracy theories about counterfeit ballots being introduced into the election.

## Paper Examination

It quickly became evident that the Senate’s contractors did not have the necessary expertise in ballot production, ballot printing, or in the processes for handling ballots that would have rendered their findings credible. Observers noted that while processes changed regularly, coinciding with the prevalence of new conspiracy theories or conjectures, these two steps remained constant:

Step 1: Take two photos of the entire ballot; the first photo is of the back of the ballot and the second photo is of the front of the ballot. This was done using a Canon 5k camera connected to a PC running the EOS software.

Step 2: Take a third photo using a microscope camera of particular areas of the ballot. These cameras were connected to the same computer, which was running an unnamed software.

A separate process, dismantled before a judge ordered the contractors to allow Secretary of State observers into the Coliseum, included putting ballots into a dark box and inspecting them under UV light, presumably for the purpose of. This process was developed in response to a conspiracy theory that counterfeit ballots from China would contain bamboo fibers.<sup>109</sup>

Observers were provided a software demonstration and the items being captured. The following items were what was described:

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<sup>109</sup> Levine, S. (2021, May 6). *Arizona Republicans hunt for bamboo-laced China ballots in 2020 'audit' effort*. The Guardian. <https://www.theguardian.com/us-news/2021/may/06/arizona-republicans-bamboo-ballots-audit-2020>.

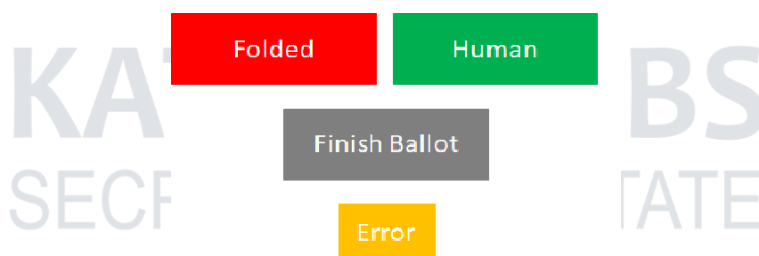
The areas on the ballot which the microscope cameras captured included:

- Calibration mark in upper right (circle with +)
- Timing mark at the top right (black square)
- Bottom left area of blank paper—to see ‘fibers’ and ‘security feature’ of the paper
- Vote selection for president (filled-in oval)—except when an overvote or undervote was present. For an overvote, they choose a selection, since the intent was to determine whether the oval was filled with “ink or toner”

According to the procedures manual posted at each table, paper examiners were to look for the following ballot features:

Key for Flagging Anomalies
Folded or Unfolded
Missing Security Feature
Presidential Selection Mark
Weight and Texture
Other

The paper examination manager described that there was a software update with a new user interface on May 8, 2021, stating that “a lot has changed.” The user interface then had the following buttons:



The paper examination manager told observers that this feature was added to the software so that the paper examination could automatically send the files to the correct folder on the server. He added that this was implemented because of human error and confusion stemming from the use of an “error folder” and manually moving the photos. After observers inquired further, he added that sending the images to the server was

also a new process. One copy of every photo went to the server and a second to an SD card. This was also a new process.

When each new box was started, a new SD card was inserted into the paper examination computer to capture all of the photos. Observers were told that this was done so that Maricopa County officials could receive a copy of all the photos taken. The SD card would be stored in the box with the ballots in a manila envelope, contradicting the previous claims to return the boxes of ballots back to the county “exactly as they were received.” Observers noted that the county should not accept the SD cards, and should refrain from introducing them into the election infrastructure.

From a cybersecurity perspective, unknown devices from questionable sources pose a significant threat to the network. From a practical standpoint, this action puts undue burden on the county, because it requires county officials to open every box and remove the electronics in order to ensure that the ballot boxes are returned in their original condition.

Initially, the paper examination manager told observers that they were capturing the data locally on a USB thumb drive, but were changing to SD cards because they were less expensive and did not require a USB-A port, leaving one open for additional uses. The observer acknowledged that each computer had a multi-USB hub and free USB ports, and inquired about what other uses would be needed for the USB port. The response was that there was no planned use; it just provided flexibility.

Observers noted that USBs were not previously seen in the paper examination computers. During the week of June 6, 2021, observers witnessed Cyber Ninjas employees copying photo images from the server onto SD cards for boxes that had been completed early in the process, and which had not previously contained an SD card. This contradicts the statement that the USB would be provided for the boxes that used it and that SD cards would only be provided moving forward.

These changes confused many of the paper examiners; observers noted that a person at paper examination table 9 stated that he was confused because the process changed from one day to the next. The paper examination manager replied, “that happens sometimes,” to which the paper examiner said, “every day, every day!”

Another paper examination manager, while describing the new software and process to paper examination table 12 personnel, stated that “[it] doesn’t mean it will be this way tomorrow, but it’s what we are doing today.” On multiple occasions, paper examination personnel complained about the microscopes falling out of place. The observers had heard the terms “fidgety” and “loose” to describe this ongoing issue.



## Machine Examination

Observers were provided limited insight into the machine examination process. During their first day on site, observers asked Blehm for access to the machine examination. However, the following morning, the contractor returned a majority of the equipment to Maricopa County, stating that they had made a copy of the election management system server and central counting devices, so they no longer needed the hardware.

Observers further noted that the Senate's contractors were unable to analyze the precinct level tabulators, because they could not determine how to access the data they wanted to review. Except when stored in the trailer during the hiatus, these devices remained on the pallet, untouched until moved again. As the contractors loaded the voting equipment onto a trailer in preparation for the move from the Coliseum to another storage facility, observers saw four physical hard drives. The contractors informed observers that the images of the data that had been extracted from the voting equipment was on those hard drives.

Shortly thereafter, Bennett confirmed that copies of voting system data had been sent to a lab in Montana. He did not specify what security measures were in place, or what the lab in Montana would do with the data, or how long the copies would be in Montana.

Observers asked Bennett about the reports which stated that Ben Cotton, founder of CyFIR, a subcontractor, had driven the files to Montana. Bennett confirmed that Cotton did take the files, but he did not know when. The observers reminded Bennett that the observers had witnessed the hard drives being stored, locked, and sealed in the trailer. In order for Cotton to physically access the data and drive it to Montana, one of three things had to happen:

1. Cotton received the hard drives from the trailer on May 23, 2021, after the equipment had been shipped back to the Coliseum from storage.
2. There was another copy of the data that was not locked and sealed in the trailer.
3. Someone accessed the trailer in the storage location, unlocked, and unsealed the trailer to obtain the hard drives.

Bennett told observers that he did not know how Cotton had obtained the data, but he made a statement that Cotton was present on May 18, 2021, during a closed question and answer session with Senators Fann and Peterson. The physical examination of the machines remains unclear, as are the Senate's contractors plans for the paper ballot images..

On June 28, 2021, the Senate's contractors and Cotton told observers that they would be moving the remaining voting machine equipment from the cage in which it was

currently located into a cage on the counting floor. This was to alleviate the need for extra security. During the move, at approximately 3:40 p.m., observers witnessed Bennett, Cotton, and other staff removing voting equipment from the aluminum rack and stacking the equipment on the table. While being moved, the rack had to be lifted over an approximately 2-inch ramp. They were not able to lift the rack over the ramp. The rack's feet hit the ramp with such force that Rack 7 collapsed and broke into pieces. Voting system scanners fell on top of each other.

During the cleanup, the red, plastic, tamper-evident seals on multiple machines broke and fell onto the floor. The Senate's contractors, Bennet, Cotton, and Pullen were quick to blame Maricopa County and the manufacturer of the rack. Cotton also told observers that no equipment had been harmed in the process, without having fully examined or tested it. Observers also saw Cotton using his cell phone in the cage on the floor to take photos of one piece of equipment, which the observers later noted had either a broken or severely scratched screen. Later, the observers noticed multiple pieces of equipment with damage.



# Conclusion

All credible audits are characterized by controls, access, and transparency that allow for the processes and procedures to be replicated, if necessary. These standards are all the more important in a post-election audit, where the outcome affects our democracy. As this report has described, the review conducted by the Senate's contractors has consistently lacked all three of these factors. Procedures have been modified and changed throughout, observer and media access has been inconsistent and limited, and the process has been opaque. This exercise has been a partisan political review of the 2020 General Election for President and U.S. Senator in Maricopa County. It was unnecessary and has undermined public confidence in accurate and secure elections that were conducted in 2020.

Maricopa County conducted both statutorily required, as well as voluntary pre- and post-election tests and audits. In an attempt to assure the public, the county also had not one, but two independent, accredited Voting Systems Test Labs conduct an audit of the ballots and equipment involved in the 2020 General Election. The election results also withstood legal scrutiny, when, in multiple lawsuits challenging the results of the election, judge after judge found that there was no credible evidence of wrong-doing or widespread fraud during the 2020 General Election.

Senators Fann and Peterson insisted on conducting this review despite the long-lasting damage their actions are having on these democratic institutions. Similar attempts to undermine the election results are spreading to other states and communities purely because some elected leaders refuse to accept the results of the election and tell their constituents the truth -- that the 2020 election cycle was secure.

It is clear that any "outcomes" or "conclusions" that are reported from the Senate's review, by the Cyber Ninjas or any of their subcontractors or partners, are unreliable. As such, it is imperative that leaders across the state and country proclaim that the 2020 General Election was fair and accurate. The voters in Maricopa County turned out, despite ongoing challenges, and made their voices heard. The right to vote is a preeminent feature of American democracy and must be honored.